

**AMENDMENTS TO THE CLAIMS:**

This listing of claims replaces all prior versions, and listings of claims in the application. Please amend the claims as follows:

1-9. (Cancelled)

10. (Currently Amended) A method for detecting a biochemical substrate glucose comprising: obtaining a mesoporous platinum electrode ~~including a electrode with a mesoporous platinum layer covering a surface thereof, without any enzyme immobilized that reacts with the~~ biomedical substrate to produce an electrical signal in which the mesoporous platinum electrode comprises an electrode and a mesoporous platinum layer covering the surface thereof and in which the mesoporous platinum electrode is a non-enzymatic electrode without any enzyme immobilized thereon that reacts with the glucose to produce an electrical signal; contacting a sample solution expected to contain the biochemical substrate with the mesoporous platinum electrode; detecting a response current generated by applying a voltage to the mesoporous platinum electrode.

11. (Original) The method of claim 10, wherein the electrode is a noble metal or an acid-resistive metal.

12. (Original) The method of claim 10, wherein the electrode is selected from the group consisting of carbon, platinum, gold, silver, and stainless steel.

13. (Cancelled)

14. (Original) The method of claim 10, wherein the mesoporous platinum layer has a thickness of 20 – 5000 nm.

15. (Cancelled)

16. (Cancelled)

17. (Original) The method of claim 10, wherein the current is measured amperometrically.

18. (Original) The method of claim 10, wherein a range of the applying voltage is between –0.1 and 0.5 V vs. a reference electrode.

19. (Original) The method of claim 18, wherein the reference electrode is Ag/AgCl.

20. (Currently amended) The method of claim 10, wherein the current generated is proportional to the glucose present in the sample from a range of 0 to 20 mM glucose.

21. (New) A glucose sensor comprised of mesoporous platinum electrode for detecting glucose, in which the mesoporous platinum electrode comprises an electrode and a mesoporous platinum layer covering the surface thereof and in which the mesoporous platinum electrode is a non-enzymatic electrode without any enzyme immobilized thereon that reacts with the glucose to produce an electric signal.